Promoting Physical Activity in Primary Care

Overcoming the barriers

JOEL SINGER, PhD
ELIZABETH A. LINDSAY, PhD
DOUGLAS M.C. WILSON, MD, CCFP

SUMMARY

The principal barriers preventing health care professionals from promoting physical activity include an incomplete understanding of the evidence linking physical activity and health, difficulty in translating research findings into a feasible and efficacious clinical intervention, resistance to adopting a preventive orientation, and concerns about the risks of physical activity. Low level activities likely provide benefit with little risk.

RÉSUMÉ

Parmi les principales barrières qu'opposent les professionnels de la santé à promouvoir l'activité physique, notons un manque de compréhension des données qui établissent un lien entre l'activité physique et la santé, la difficulté de traduire les données de recherche en intervention clinique réalisable et efficace, la résistance à orienter les soins de santé vers la prévention et les craintes entourant les risques inhérents à l'effort physique. Les activités de faible intensité sont susceptibles d'être bénéfiques et comportent un risque minime.

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SEVERAL FACTORS AFFECT whether health care professionals (HCPs) prescribe exercise to patients in primary care. Although our focus is on the family physician, many of the factors are common to all HCPs (eg, educational, attitudinal, financial reimbursement), and the methods for overcoming barriers share similarities across disciplines.

The family physician, as the situation now exists, is more likely to be on the front line of patient care and has access to a far greater proportion of the population than other HCPs. Although discussions about the potential benefits of exercise are appropriate for some circumstances in secondary and tertiary care, we believe that such discussions have the greatest potential impact in primary care.

Increases in the number of health service organizations, where allied health professionals play an important and complementary role, could shift both the opportunity and the responsibility for promoting physical activity away from physicians. In fact, this sort of change in the delivery of health care represents one of the most important policy developments that could affect the provision of health promotion and disease prevention services. It could well be that the family physician might act most effectively by providing the initial impetus for an increase in activity while guiding patients to other HCPs or to community resources for long-term planning and follow up.

In discussing barriers to physician involvement in exercise prescription, we are implicitly advocating involvement. However, one of the challenges is to explore the most effective role for HCPs within a more comprehensive organizational scheme. Although HCPs might be able to induce some change while acting as an independent group, the synergy created by integration at a community level will achieve more cost-effective results.[1]

Determining whether exercise provides any health benefit is crucial for the family physician to issue an exercise prescription. The question of how much is necessary is often a barrier to prescribing increased activity. Although engaging in exercise to achieve a high degree of cardiovascular fitness can reduce the risk of cardiovascular disease, increased activity through walking and stair climbing can also have important

Dr Singer *is Assistant Professor, Department of Health Care and Epidemiology, University of British Columbia, Vancouver.* **Dr Lindsay** *is Associate Professor, Department of Preventative Medicine and Biostatistics, University of Toronto, Ont.* **Dr Wilson,** *a Fellow of the College, is Professor in the Department of Family Medicine, McMaster University, Hamilton, Ont.*

beneficial effects in otherwise sedentary individuals.[2] This has been argued extensively elsewhere.[3] We will assume that even increases in less intense physical activities can produce some beneficial effects, at least in perception of well-being for sedentary individuals. In fact, it has been suggested that the greatest gain in benefit per unit change in activity occurs at the low end of the activity spectrum.[4-7]

What determines involvement?

Lawrence Green and M.P. Eriksen, at a recent International Symposium on Preventive Services in Primary Care, presented a framework for examining factors that facilitate and discourage professional involvement in preventive practices.[8] This framework is built on 20 years of researching the "Health Belief Model" as a predictor of health behavior[9] and provides a convenient classification of factors described as predisposing, enabling, and reinforcing. Predisposing factors are largely beliefs and attitudes and represent those ways of thinking that the HCP brings to a situation: for example, the belief that only heavy exercise has any health benefits. Enabling factors are those that make it easy and feasible to carry out certain actions. For example, if a physician has a wealth of personal experience in physical activity, talking to patients about exercise is quite easy. Reinforcing factors provide encouragement to continue the practice. Finding that patients appreciate the advice and respond positively is likely to encourage physicians to raise the issue with more patients.

Some of the most extensive work to date in understanding the physician's role in helping patients with changes in health behavior has focused on smoking cessation.[10] Based on this research, Ockene[11] lists barriers to physician involvement in cessation counseling that can be applied to exercise prescription.

Mann and Putnam[12] conducted a more general survey of determinants of preventive practices in Nova Scotia and have grouped their findings according to the classification of Green and Eriksen.[8] Predisposing factors identified as important are attitudes regarding the potential effectiveness of preventive interventions, as well as perceptions about patient compliance. Key enabling factors appear to be the skills for intervening effectively, as well as practice patterns and environments that provide a system and time for preventive counseling. Reinforcing factors include reimbursement and patient response to the physicians' advice. We will examine a number of these factors in terms of exercise advice and will recommend methods for overcoming the barriers.

Predisposing factors

Evidence for the benefits of exercise. The first issue concerns the strength of evidence linking exercise and health. Although physical activity is known to reduce cardiac morbidity and mortality,[13-21] there is still considerable confusion about how vigorous the activity must be and about how activity benefits various subgroups of patients.

One survey[22] reported that 47% of Massachusetts primary care physicians said they routinely asked about physical exercise, but only 27% believed that it was very important. In comparison with other risk factors, such as smoking, high blood pressure, and high levels of dietary fats, physicians are justified in identifying exercise as a "less important" factor. However, in approaching lifestyle issues, because of the relationships between the issues, it can be more sensible to take an integrated perspective addressing lifestyle in general, with particular emphasis on areas where the patient needs to adopt more healthful habits. Quite often individual patients will have more than one risk factor, and patients should be encouraged to decide how they can best reduce their risk. For instance, data from our smoking cessation projects suggest that concern about weight gain constitutes a major barrier for patients in quitting smoking. Thus, a successful cessation program could require increases in level of physical activity, which can produce benefits on two fronts.

Perceived impact. Even if one is willing to accept the link between increased physical activity and positive health outcomes, there still remains the question of whether HCPs can have a positive impact on this problem in a cost-effective way. A survey of 1040 primary care physicians revealed

that, while most physicians believed they should attempt to modify risk factors, very few believed they were successful.[23]

There has been little work done to assess the effect of physician advice on increasing exercise and activity levels in primary care. We know, however, that in one other area of lifestyle change (smoking), physicians can have a small but statistically significant impact.[24] The impact of smoking on health is better documented than that of exercise, and there is increasing consensus that physician interventions can be cost-effective.[25] Physician-initiated exercise intervention is at a much earlier stage of development. We need to determine whether the effect of lifestyle intervention can be increased if physicians are better trained and more confident in their ability to counsel patients.

Enabling factors

Training and education. Most physician training uses the disease model with very little emphasis on preventive medicine or health maintenance.[26] However, even for those who are eager to be involved in this sort of practice regularly, there are other sorts of barriers. Health care professionals need to develop skills for helping patients 1) identify what activities might be most effective for them in the short term and long term and 2) develop a plan that will facilitate adherence. The HCP should also be aware of community resources that are available to meet the patients' needs.

Practice environment. Structural factors in the practice can also facilitate or inhibit preventive practices. An office system for screening patients and keeping track of their status has been helpful in the smoking cessation work.[27-29] An added dimension in screening for exercise prescription is the perceived need to do more extensive testing on patients who might put themselves at risk by participating in more strenuous exercise programs (eg, sedentary individuals older than 45).

Knowledge of risks. One of the greatest deterrents in prescribing exercise to sedentary individuals can be the fear of precipitating a cardiac event. The publicity that surrounds sudden death during exercise has made this a concern for HCPs. The risks are, in fact, very low. Although risk of a cardiac event is heightened during physical activity, regular physical activity contributes to an overall lowering of the incidence of cardiac events. The risk is greatest in men who are 45 and older, particularly in those who have other cardiovascular risk factors.

One solution to the risk problem would be to screen every patient with an exercise test. However, if the incidence of a disease is low in a population, as would be the case for cardiac disease in an asymptomatic population, the ratio of false positive to true positive results is likely to be high. Thus, for every person in whom risk would be identified, several others would be burdened with unnecessary anxiety. Furthermore, even those appropriately identified would be burdened with the label of being diseased and the disruptions that accompany this label.

While the medicolegal concerns are valid, we agree with the American College of Sports Medicine and do not advocate mass screening as the initial step in recommending increased exercise in sedentary individuals.[30] It is very unlikely that a program of walking will precipitate a cardiac event. Furthermore, on a societal level, the health benefits engendered by regular physical activity likely far outweigh the accompanying risks.

Exercise testing is appropriate in some individuals. A number of important variables must be taken into account. Realistically, the rate of compliance with a suggestion to increase physical activity will be low, and maintenance could be lower. It is logical, when suggesting an activity program to any inactive patient, to recommend beginning with a low intensity program. If a patient who falls into a high-risk category first complies and adheres to the recommendation and then wishes to increase the intensity of physical exercise, it is appropriate to recommend returning for an additional consultation.

We acknowledge that there is some risk involved when a previously sedentary individual becomes active. Nevertheless, the risks of low intensity exercise do not justify mass screening for cardiac disease. Patients in high-risk categories who adhere to a low intensity program and wish to increase the intensity should be advised to have an exercise test as a precaution.

Community resources. Accessibility to high quality community programs and facilities are important enabling factors. To increase the activity level of community members significantly, we need organizations in place to assess barriers and address needs. These could include educational campaigns conducted through various avenues, such as the mass media, schools, adult education classes, the workplace, and physician offices. In the absence of workplace programs, it might be desirable to ensure easy access to exercise programs close to industrial areas. This could help to overcome convenience and scheduling problems if such barriers really inhibit levels of participation in exercise.

Programs designed to involve spouses and families and involving social aspects might also contribute to participation rates. In addition, leadership programs to develop individuals with a firm knowledge base, good organizational skills, and the capability of instilling enthusiasm in others would improve adherence to exercise programs.

All HCPs have a role within this sort of societal organizational structure. For instance, dietitians and physiotherapists might be able to have considerable impact on their patients because a large proportion of their patients could have health reasons in addition to other motivating forces for exercise. Physicians could make more referrals, particularly for patients who would be most likely to benefit from increased activity levels, to allied health professionals.

Reinforcing factors

Patient compliance. The universal fitness movement provides a cultural context that supports physicians' advice for patients to become more physically active. In fact, surveys indicate substantial increases in the number of people who participate in regular physical activity.[31] A Canadian survey reported approximately 50% to 60% of adults feel that they would like to be more active.[31] However, most people who begin to exercise do not continue, and several factors have been identified that predict adherence to regular physical activity. Familiarity with these key factors should help physicians provide useful advice to their patients.

Central to adherence are the reasons that people begin to exercise, compared with those given for continuing to exercise. Most people begin to exercise for reasons related to their health. Whether people continue to exercise is more related to intrinsic reinforcement, such as how much they enjoy what they are doing and social factors related to their activity.[32]

Enabling factors are critical to continuing regular physical activity. The most often reported issue is time availability. Whether this is a perceived or real problem, organizing time for activity is a very important step to success. Ease of access to facilities is also related to long-term adherence and should be considered in the planning process.[33] One of the reasons that walking has become a popular choice is that it avoids the practical problem of access to facilities. Walking also is a relatively safe choice and appropriate, given that injury is often the reason given for dropping out of exercise programs.[34]

Reimbursement. The provision of the type of care we are advocating is somewhat limited by the current health insurance scheme, as well as by the usual pattern of practice. If we truly believe that these are valuable services, then there must be some financial commitment to support them and incentives for HCPs. Furthermore, these services might be provided more cost effectively within the context of a health service organization or comprehensive health organization.

Suggestions for change

The first challenge is to change attitudes of physicians toward health promotion. Although the dominant orientation in medical schools has been the traditional disease model, there has been pressure in recent years with the release of the new federal framework and the reports of the Ministry of Health in Ontario[35-37] to increase promotion of healthy lifestyles. With such an orientation, HCPs function as part of a larger social network affecting societal attitudes and behaviors.

Health care professionals often lack the confidence or feel unprepared to deliver interventions for behavior change.[12] We must work both nationally and locally to address predisposing, enabling, and reinforcing factors to reduce barriers to HCP involvement in changing patients' exercise patterns sys-

tematically. National issues include a change in the wider culture to support a more active lifestyle, perceptions that medical education should include more preventive medicine and health promotion, and a growing acceptance of community-based health goals. Local issues include systematic interventions and reasonable expectations.

National issues. A cultural shift that is now appearing supports a more active lifestyle. Social learning theory suggests that this cultural context supporting exercise will influence the predisposing attitudes of HCPs and will enhance patients' ability to begin and stay with a change in physical activity.[38]

We are also seeing shifts in what medical education should include, and many are voicing the need for change in our health care delivery system to include more preventive medicine and health promotion.[3,39] It is important that medical education at the undergraduate and postgraduate levels be modified both to foster a preventive attitude and to impart the necessary skills and knowledge for effective health promotion. Education would also address methods for incorporating such practices on a regular and time-efficient basis.

Another change at the national level is a community development model for promoting healthy living. There is growing acceptance of the necessity for many sectors of communities to work together to reach health goals.[36] A more physically active population is an appropriate goal for this type of community organization because the social aspects and the need for facilities in physical activity are important to many people. This model allows HCPs to apply their specific knowledge and skills within a larger scheme and therefore potentially to maximize their effectiveness.

Local issues. At the local level, we need to make preventive interventions more systematic to enable the individual HCP to function efficiently with limited time. Normal practice should include reminder systems for screening and monitoring patient behavior, such as the level of physical activity. As computers become more commonly used to document patient status, it will be easier to generate automatic reminders for the HCP. Manual systems, however, can also be simple and efficient.

In addition, it is important to have reasonable expectations of success. For many problems, physicians routinely see a rapid response to treatment, eg, drug therapy. In general, people change slowly and will not necessarily show measurable physiologic effects. Physicians therefore need to learn to look for different measures of successful intervention: eg, patients who begin to exercise usually report enhanced quality of life.

Health care professionals need to know what is appropriate to prescribe, as well as what community resources are available (both in terms of educational services and appropriate facilities). These resources include printed materials that are often available from community organizations free of charge.

Even for a motivated, knowledgeable, well-organized HCP, the issues of time and compensation are important barriers to incorporating prescription of exercise on a routine basis. If the HCP is working in isolation without other community supports, then it is unlikely that much can be achieved without considerable time and effort. Even if the HCP can afford the time, society must be willing to make adequate recompense. Two to three minutes of a physician's time devoted to the issue of exercise during a regular checkup is feasible and affordable but will likely require additional resources to affect patient exercise habits.

What physicians can do

We believe that health professionals, and particularly primary care physicians, can play an important role in promoting higher levels of physical activity within the community. There is work to be done both nationally and locally. First, HCPs need to know about the data linking exercise and health outcomes; then they need to clarify their responsibility to advise patients on exercise; and they must understand the effect on activity levels that they are likely to have.

Once these prerequisites are established, we can reduce barriers that interfere with intervention in the health care setting. Finally we must continue to investigate how best to support behavior change in the population. Individual practitioners can sum-

marize recommendations in the context of what we refer to as the three As – ask, advise, and assist.

Asking. As part of monitoring patients' health behavior, physicians can note exercise practices and, as often as possible, make a general statement in support of regular physical activity. The HCP should ask whether the patient is sedentary and whether the patient is interested in becoming more active. For those sedentary patients who are interested, the HCP should ask about past favorite physical activities and determine patient barriers that have prevented activity.

Advising. The motivation used to encourage patients should not necessarily be the link between lack of exercise and cardiac disease. Increased levels of activity are as likely to be motivated by such things as weight control, enjoyment, reduction of stress, increased feelings of energy and self-esteem, and the social interaction of certain activities. This information will help patients formulate an acceptable program with attainable goals tailored to their needs, characteristics, and personal constraints.

It is important that specific activities with somewhat flexible goals be targeted, rather than simply encouraging the patient to exercise more often to increase fitness. The nature of the advice will vary with the patient's current activity status. In some cases, it is necessary only to advise an increase in frequency or duration of an activity in which the patient is already involved; for others, it may mean gradually resuming a past activity or initiating a new one.

Assisting. The HCP can further assist the patient by offering tips for initiating and maintaining a program. Patients who have been sedentary should begin with moderate activity, such as brisk walking, to prevent injury and discomfort and to encourage adherence. Adherence is a serious problem in exercise programs. The drop-out rates tend to be between 40% and 50% for 6 to 12 months, both in coronary patients and in healthy adults. Although some physical activities can be performed solo, there is evidence that social involvement is important for encouraging adherence.[33,34] Encouraging the patient to involve a spouse or friend in the activity can be helpful. Knowledge of and referral to community resources are also a valuable part of an exercise prescription. Numerous educational pamphlets about starting exercise programs are available free of charge from governmental and health agencies to HCPs for dispensing to their patients.

Thus, we see HCPs as playing the role of catalyst, in the sense that they can provide the face-to-face encounter that can facilitate other approaches to assist people to become more active. The approach we are recommending bypasses many of the barriers that currently exist, including time and reimbursement constraints, and limits the need for extensive training. There must, at the same time, be community-wide structures that support the needs of patients when they are ready to adopt a more active lifestyle. ■

Requests for reprints to: *Dr Douglas M.C. Wilson, McMaster University, Department of Family Medicine, 1200 Main St W, Room 2V14, Hamilton, ON L8N 3Z5*

References

1. Evans JR, Chairman. *Toward a shared direction for health in Ontario.* Report of the Ontario Health Review Panel, June 1987. Toronto, Ont: Ontario Ministry of Health, 1987.
2. Rippe JM, Ward A, Porcari JP, Freedson PF. Walking for health and fitness. *JAMA* 1988;259:2720-4.
3. Harris SS, Caspersen CJ, DeFriese GH, Estes H. Physical activity counseling for healthy adults as a primary preventive intervention in the clinical setting. Report for the US Preventive Services Task Force. *JAMA* 1989;261:3590-8.
4. Paffenbarger RS Jr, Hyde RT, Wing AL, Steinmetz CH. A natural history of athleticism and cardiovascular health. *JAMA* 1984;252:491-5.
5. Powell KE, Spain KG, Christenson GM, Mowenkamp MP. The status of the 1990 objectives for physical fitness and exercise. *Public Health Rep* 1986;101(1):15-21.
6. Haskell WL, Montoye HJ, Orenstein D. Physical activity and exercise to achieve health-related physical fitness components. *Public Health Rep* 1985;100(2):202-11.
7. Rechnitzer RA, Cunningham DA, Andrew GH, Buck CW, Jones NL, Kavanagh T, et al. Relation of exercise to the recurrence of myocardial infarction in men. *Am J Cardiol* 1983;51:65-9.
8. Green LW, Eriksen MP. Behavioral determinants of preventive practices by physicians. Read before the 1987 Symposium: Preventive Services in Pri-

mary Care, Issues and Strategies. Montreal, Que, Oct 2-3, 1987.

9. Janz RK, Becker MH. The health belief model: a decade later. *Health Educ Q* 1984;11(1):1-47.

10. Ockene JK. Physician delivered interventions for smoking cessation. Strategies for increasing effectiveness. *Prev Med* 1987;16:723-37.

11. Ockene JK. Smoking intervention: the expanding role of the physician [editorial]. *Am J Public Health* 1987;77(7):782-3.

12. Mann KV, Putnam RW. Physicians' perceptions of their role in cardiovascular risk reduction. *Prev Med* 1989;18:45-58.

13. Paffenbarger RS Jr, Hyde RT, Wing AL, Chung-Chang-Hsieh. Physical activity, all-cause mortality, and longevity of college alumni. *N Engl J Med* 1986;314:605-13.

14. Rigotti NA, Thomas GS, Leaf A. Exercise and coronary heart disease. *Ann Rev Med* 1983;34:391-412.

15. Leon AS, Connett J, Jacob DR Jr, Rauramaa R. Leisure-time physical activity levels and risk of coronary heart disease and death. *JAMA* 1987;258:2388-95.

16. Slattery ML, Jacobs DR Jr. Physical fitness and cardiovascular disease mortality: the U.S. Railroad Study. *Am J Epidemiol* 1988;127:571-80.

17. Peters RK, Cady LD Jr, Bischoff DP, Bernstein L, Pike MC. Physical fitness and subsequent myocardial infarction in healthy workers. *JAMA* 1983;249:3052-66.

18. Paffenbarger RS Jr, Wing AL, Hyde RT. Physical activity as an index of heart attack risk in college alumni: XVI. Chronic disease in former college students. *Am J Epidemiol* 1978;108:161-75.

19. Powell KE, Thompson PD, Caspersen CJ, Kendrick JS. Physical activity and the incidence of coronary heart disease. *Am Rev Public Health* 1987;8:253-87.

20. Morris JN, Adam C, Chave SPW, Sirey C, Epstein L, Sheehan DJ. Vigorous exercise in leisure-time protection against coronary heart disease. *Lancet* 1973;1:333-9.

21. Morris JN, Pollard R, Everitt MG, Chave SPW, Semmence AM. Vigorous exercise in leisure-time protection against coronary heart disease. *Lancet* 1980;2:1207-10.

22. Wechsler H, Levine S, Idleson RK, Rohman M, Taylor JO. The physician's role in health promotion – a survey of primary-care practitioners. *N Engl J Med* 1983;308:97-100.

23. Valente C, Sobal J, Manice H, Levine DM, Antlitz AM. Health promotion: physician's beliefs, attitudes and practices. *Am J Prev Med* 1986;2:82-8.

24. Wilson DMC, Taylor DW, Gilbert JR, Best JA, Lindsay EA, Willms DG, et al. A randomized trial a of family physician intervention for smoking cessation. *JAMA* 1988;260:1570-4.

25. Cummings SR, Rubin SM, Oster G. The cost-effectiveness of counseling smokers to quit. *JAMA* 1989;261:75-9.

26. Jonas S. Health promotion in medical education. *Am J Health Prom* 1988;3(1):37-42.

27. Cohen SJ, Christen AG, Katz BP, Drook CA, Davis BJ, Smith DM, et al. Counselling medical and dental patients about cigarette smoking: the impact of nicotine gum and chart reminders. *Am J Public Health* 1987;77(3):313-6.

28. Lindsay EA, Wilson DM, Best JA, Willms DG, Singer J, Gilbert JR. A randomized trial of physician training for smoking cessation. *Am J Health Prom* 1989;3(3):11-8.

29. Solberg LO. Implementing a tobacco cessation program in clinical practice. *Med Times* 1988;116:119-24.

30. American College of Sports Medicine. *Guidelines for exercise testing and prescription.* Philadelphia, Pa: Lea and Febiger, 1986.

31. Canadian Fitness and Lifestyle Research Institute. *Campbell's survey on well-being in Canada [press release].* Ottawa, Ont: Canadian Fitness and Lifestyle Research Institute, June 1989.

32. Dishman RK. Exercise adherence research: future directions. *Am J Health Prom* 1988;3(1):53-6.

33. Oldridge NB. Adherence to adult exercise fitness programs. In: Matarazzo JD, Weiss SM, Herd JA, Miller NE, editors. *Behavioral health: a handbook of health enhancement and disease prevention.* New York, NY: Wiley, 1984:467-87.

34. Mirotznik J, Speedling E, Stein R, Bronz C. Cardiovascular fitness program: factors associated with participation and adherence. *Public Health Rep* 1985;100(1):13-8.

35. Lalonde M. *A new perspective on the health of Canadians.* Ottawa, Ont: Health and Welfare Canada, 1974.

36. Epp J. *Achieving health for all: a framework for health promotion.* A Report of the Minister of Health. Ottawa, Ont: Ministry of Supply and Services, 1986.

37. Office of the Assistant Secretary for Health and Surgeon General. *Healthy people: the Surgeon General's report on health promotion and disease prevention.* Washington, DC: US Government Printing Office; 1979 DHEW (PHS) Publication No. 79-55071.

38. Bandura A. *Social learning theory.* Englewood Cliffs, NJ: Prentice-Hall, 1977:247.

39. Rachlis M, Kushner C. *Second opinion: what's wrong with Canada's health care system and how to fix it.* Toronto, Ont: Collins, 1989.